

ethanol from a hydrolyzed lignocellulose-based, hexose-rich [lignocellulose-containing] material, comprising fermenting said hydrolyzed [lignocellulose-containing] lignocellulose-based, hexose-rich material with a yeast strain which is capable of converting free xylose to xylitol and free hexose present to ethanol to form a fermented product comprising xylitol, ethanol and yeast, recovering the resulting ethanol and chromatographically separating a xylitol-rich fraction from the remaining fermented product, and recovery xylitol from said xylitol-rich fraction, wherein a majority of starting material is processed.

3. (Twice Amended) The process according to Claim 1, wherein said lignocellulose-based, hexose-rich [lignocellulose-containing] material is birch or grain hulls.

4. (Twice Amended) The process according to Claim 1, wherein said [lignocellulose-containing] lignocellulose-based, hexose-rich material is sulphite spent liquor.

11. (Amended) The process according to Claim [2] 22, wherein [the] hydrolysis is carried out by steam explosion and enzymatic hydrolysis.

19. (Amended) The process according to claim 1, wherein hydrolysis is carried out by the process selected from acid hydrolysis, enzymatic hydrolysis and combinations thereof [said lignose-containing material is hydrolyzed by steam explosion].

20. (Amended) The process according to claim [claims 1 or] 19, wherein hydrolysis is carried out by acid hydrolysis [said lignose-containing material is hydrolyzed enzymatically].